REMARKS

STATUS OF CLAIMS

Claims 1-20 are pending. The Examiner has maintained and made final the restriction requirement. Non-elected claims 14-16 have been withdrawn from consideration, and claims 1-13 and 17-20 are under examination. Claims 1-13 and 17-20 have been rejected on various grounds.

Applicants have amended claim 17 to correct a minor typographical error. The amendment introduces no new matter.

In view of the arguments below, Applicants respectfully request allowance of claims 1-13 and 17-20.

CLAIM REJECTIONS UNDER 35 U.S.C. § 102(a), § 102(e) or § 102(b)

Rejection of claims under 35 U.S.C. § 102(a) and (e) over Little *et al.*

Claims 1, 2, 7-10 and 17 stand rejected under 35 U.S.C. § 102(a) and (e) as being anticipated by Little *et al.* (U.S. Patent No. 6,024,925).

Independent claim 1 requires, in part:

> "...an X, Y controller operably connected to the base wherein the X, Y controller is selectively positionable along an X axis and a Y axis, the X, Y controller further comprising a deposition substrate operably attached thereto and wherein the movement of the X, Y controller moves the deposition substrate between a first position and a second position, the second position being operably positioned relative to the deposition probe; and
>
> an X, Y translation stage operably connected to the base wherein the X, Y translation stage is selectively positionable along an X axis and a Y axis, the X, Y translation stage further comprising a loading substrate operably attached thereto and wherein the movement of the X, Y translation stage moves the loading substrate between a first position and a second position, the second position being operably located relative to the deposition probe" (underlining added for emphasis).

Claim 17 requires, in part:

"...an X, Y controller operably attached to the Z controller; and

a deposition substrate operably affixed to the X, Y controller where the deposition substrate is selectively movable between a first position and a second position and wherein when the X, Y controller moves the deposition substrate to the second position the deposition substrate is operably positioned relative to the tip" (underlining added for emphasis).

Applicants respectfully submit that Little *et al.* do not teach, describe, or suggest an apparatus for creating a molecular array according to claim 1 or an apparatus for creating an array according to claim 17. With reference to Fig. 1, Little *et al.* teach a system 10 that includes a robotic assembly 16, a microliter plate of source material 20, a stage housing 22, a robotic arm 24, a stage 26, a pin assembly 38, and substrate elements 34. The robotic assembly 16 depicted in Fig. 1 is a gantry system that includes an XY table for moving the robotic arm about an XY plane, and further includes a Z axis actuator for moving the robotic arm orthogonally to that XY plane. In the depicted embodiment, the XY table is mounted to the Z actuator to move the entire table along the Z axis orthogonal to the XY plane. In this way, the robotic assembly 16 provides three degrees of freedom that allows the pin assembly 38 to be "disposed to any location above the substrates 34 and the source plate 20 which are shown in Fig. 1 as sitting on the stage 26 mounted to the robotic assembly 16" (Col. 6, lines 43-59; underlining added for emphasis). That is, the source plate 20 and substrates 34 as taught by Little *et al.* are fixed in the system 10 and are not movable between a first and second position relative to the pin assembly 38.

Little *et al.* do not teach, describe or suggest "...an X, Y controller...the X, Y controller further comprising a deposition substrate operably attached thereto and wherein the movement of the X, Y controller moves the deposition substrate between a first position and a second position, the second position being operably positioned relative to the deposition probe; and an X, Y translation stage...the X, Y translation stage further comprising a loading substrate operably attached thereto and wherein the movement of the X, Y translation stage moves the loading substrate between a first position and a second position, the second position being operably located relative to the deposition probe," as required by claim 1, nor does Little *et al.* do not teach, describe or suggest "...an X, Y controller...; and a deposition substrate operably affixed to the X, Y controller where the deposition substrate is selectively

movable between a first position and a second position and wherein when the X, Y controller moves the deposition substrate to the second position the deposition substrate is operably positioned relative to the tip," as required by claim 17.

Because claim 1 is not anticipated by Little *et al.*, each of claims 2 and 7-10, which depend from and further limit claim 1, is novel over the art of record for the reasons set forth above and upon other features, elements and limitations recited in claims 2 and 7-10 but not discussed herein.

Applicants respectfully submit that, because the cited references fail to teach all of the claim limitations, the rejection of claims 1, 2, 7-10 and 17 under 35 U.S.C. § 102(a) or § 102(e) is improper. Accordingly, Applicants request withdrawal of the rejection.

Rejection of claims under 35 U.S.C. § 102(b) as being anticipated by Cathcart *et al.*

Claims 1, 2, 7, 8, 10 and 17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Cathcart *et al.* (U.S. Patent No. 5,443,791). Applicants respectfully submit that Cathcart *et al.* do not teach, describe or suggest an apparatus for creating a molecular array according to claim 1 or an apparatus for creating an array according to claim 17.

With reference to Fig. 1, Cathcart *et al.* teach an automated laboratory (AL) 11 for performing chemical processes involved in molecular biology. The automated laboratory 11 includes a Cartesian transport apparatus 31 that moves a pipette needle 33 of a system for aspirating liquids from containers at the various stations and dispensing liquids at the same or other stations. The transport device 31 moves along slot 35 passing over the storage and activity stations. The pipette needle is movable along arm 37 of the transport device in the direction of arrow 39 and the transport is movable along slot 35 in the direction of arrow 41 to position the pipette over any container position at any station. The pipette needle is translatable vertically in the direction of arrow 43 so the transport apparatus is a Cartesian XYZ mechanism capable of placing the pipette in any container on the AL work surface (Col. 8, lines 14-17 and Col. 8, line 61 – Col. 9, line 2). The storage and activity stations as taught by Cathcart *et al.* are positioned on work surface 22 (see Fig. 1), are fixed relative to the pipette needle 33, and are not movable between a first and second position relative to the

pipette needle 33. Cathcart *et al.* do not teach, describe or suggest "...an X, Y controller...the X, Y controller further comprising a deposition substrate operably attached thereto and wherein the movement of the X, Y controller moves the deposition substrate between a first position and a second position, the second position being operably positioned relative to the deposition probe; and an X, Y translation stage...the X, Y translation stage further comprising a loading substrate operably attached thereto and wherein the movement of the X, Y translation stage moves the loading substrate between a first position and a second position, the second position being operably located relative to the deposition probe," as required by claim 1, nor does Cathcart *et al.* teach, describe or suggest "...an X, Y controller...; and a deposition substrate operably affixed to the X, Y controller where the deposition substrate is selectively movable between a first position and a second position and wherein when the X, Y controller moves the deposition substrate to the second position the deposition substrate is operably positioned relative to the tip," as required by claim 17.

Because claim 1 is not anticipated by Cathcart *et al.*, cited art, each of claims 2, 7, 8, and 10, which depend from and further limit claim 1, is novel over the art of record for the reasons set forth above and upon other features, elements and limitations recited in claims 2, 7, 8, and 10, but not discussed herein.

Applicants respectfully submit that, because the cited references fail to teach all of the claim limitations, the rejection of claims 1, 2, 7, 8, 10, and 17 under 35 U.S.C. 102(b) is improper. Accordingly, Applicants request withdrawal of the rejections.

CLAIM REJECTIONS UNDER § 103(a)

Rejections under 35 U.S.C. § 103(a) over Little *et al.* in view of Regan *et al.*

Claims 3, 4, 11, 18 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Little *et al.* in view of Regan *et al.* (U.S. Patent No. 6,395,554). Claims 3, 4, and 11 depend from claim 1, and claim 18 depends from claim 17.

Independent claim 20 is drawn to:

"[a]n apparatus for creating a deposition domain comprising:

an X, Y and Z controller;

a loading substrate operably and movably attached to the Z controller;

a deposition substrate operably and movably attached to the Z controller;

a deposition probe operably attached to the Z controller; and

a humidity controller operably attached to the Z controller wherein the humidity controller selectively controls the humidity level around the deposition probe, the loading substrate, and the deposition substrate" (underlining added for emphasis).

Little *et al.* do not teach "...a loading substrate operably and movably attached to the Z controller..." and/or "...a deposition substrate operably and movably attached to the Z controller...," as required by claim 20 (underlining added for emphasis). Rather, as discussed above, the source plate 20 and substrates 34 as taught by Little *et al.* are fixed in the system 10.

The Examiner acknowledged that Little *et al.* do not teach a humidity controller as required by claim 20, and cited Regan *et al.* as teaching controlling humidity during array deposit. However, even if Regan *et al.* do teach controlling humidity during array deposit as the Examiner submits, combining Regan *et al.* with the apparatus as taught by Little *et al.* does not cure the deficiencies of Little *et al.* in teaching "...a loading substrate operably and movably attached to the Z controller..." and/or "... deposition substrate operably and movably attached to the Z controller...," as required by claim 20 (underlining added for emphasis).

Claims 3, 4 and 11 are each ultimately dependent from claims 1, and claim 18 depends from claim 17. Combining Little *et al.* with Regan *et al.* does not cure the deficiencies of Little *et al.* in teaching all of the claim limitations of independent claims 1 and 17. Dependent claims 3, 4, 11 and 18 are, therefore, not unpatentable under 35 U.S.C. 103(a) over the combination of references based upon claims 1 and 17 for the reasons set forth above and upon other features, elements and limitations recited in claims 3, 4, 11 and 18 but not discussed herein.

Because the combination of publications fails to teach or suggest all of the claim limitations, Applicants respectfully submit that a case of prima facie obviousness has not

been established and request withdrawal of the rejections of claims 3, 4, 11 and 18 under 35 U.S.C. § 103(a).

Rejections under 35 U.S.C. § 103(a) over Little *et al.* in view of Tonucci *et al.*, in view of Anderson *et al.*, in view of Anderson *et al.* further in view of Regan *et al.* and Morozov *et al.*, or in view Regan *et al.* and Mirkin *et al.*

Claims 5 and 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Little *et al.* in view of Tonucci *et al.* (U.S. Patent No. 6,087,274). Claim 12 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Little *et al.* in view of Anderson *et al.* (U.S. Patent No. 5,993,627). Claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Little *et al.* in view of Anderson *et al.* as applied to claim 12 and further in view of Regan *et al.* and Morozov *et al.* (U.S. Patent No. 6,350,609). Claim 19 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Little *et al.* in view of in view of Regan *et al.* as applied to claim 20 and further in view of Mirkin *et al.* (U.S. Patent Application Publication No. 2002/0063212).

Little *et al.* is cited for the reasons given for rejecting claim 1 under 35 U.S.C. § 102(e) or claim 20 under 35 U.S.C. § 103(a). Claims 5, 6, 12 and 13 are each ultimately dependent from claim 1, and claim 19 depends from claim 20. Tonucci *et al.*, Anderson *et al.*, Regan *et al.*, Morozov *et al.*, and/or Mirkin *et al.* were cited as teaching the further limitations of claims 5, 6, 12, 13, or 19. However, the cited art does not cure the deficiencies of Little *et al.* in teaching all of the claim limitations of independent claim 1 or 20, as discussed above. Dependent claims 5, 6, 12, 13, and 19 are therefore not unpatentable under 35 U.S.C. § 103(a) over the combination of references based upon claim 1 for the reasons set forth above, and upon other features, elements and limitations claimed in claims 5, 6, 12, 13, and 19 but not discussed herein.

Because the combination of publications fails to teach or suggest all of the claim limitations, Applicants respectfully submit that a case of prima facie obviousness has not been established and request withdrawal of the rejections of claims 5, 6, 12, 13, and 19 under 35 U.S.C. § 103(a).

Although Applicants believe that the rejection of claim 19 is overcome on the basis of the deficiencies of the primary reference, as stated above, Applicants wish to emphasize that they make no concession as to what, if any, portion of Mirkin *et al.* (U.S. Patent Application Publication No. 2002/0063212) is in fact available as a reference to the instant claimed invention. Mirkin *et al.*, which was filed and published after the filing date of the instant application, has a claim of priority that is very dubious and ambiguous. The information provided under "Related U.S. Application Data", reproduced below, indicates that the claim of priority lacks a proper chain:

> "Non provisional of provisional application No. 60/115,133, filed on Jan. 7, 1999. Non-provisional of provisional application No. 60/157,633, filed on Oct. 4, 1999. Non-provisional of provisional application No. 60/207,711, filed on May 26, 2000. Non-provisional of provisional application No. 60/207, 713, filed on May 26, 2000. Continuation-in-part of application No. 09/477,997, filed on Jan. 5, 2000."

Clearly, the Mirkin *et al.* application cannot be a non-provisional of provisional applications filed more than one year prior to the filing date of the provisional application. Further, it is not clear to Applicants what was added to the applications to which the cited Mirkin *et al.* application attempts to claim priority. Applicants believe that they have overcome this rejection by persuasively distinguishing the primary reference. However, should the Examiner maintain the rejection, and to the extent that the Examiner is relying on Mirkin *et al.* for its discussion of Lo *et al.* and James *et al.*, 1999 and 1998 *Langmuir* publications, as teaching that "hydrophilicity can be increased by cleaning the tips (e.g., with a piranha solution, by plasma cleaning, or with UW ozone cleaning) or by oxygen plasma etching" (page 4, ¶54), Applicants respectfully request that the latter publications be made of record and cited against the claims instead of Mirkin *et al.*

DOUBLE PATENTING - CLAIM REJECTIONS UNDER § 101

Claim 1 stands provisionally rejected under 35 U.S.C. § 101 as claiming the same invention as that of claim 1 of copending U.S. Application Serial No. 10/128,727. Applicants will cancel claim 1 from copending U.S. Application Serial No. 10/128,727 once it has been allowed in the present application.

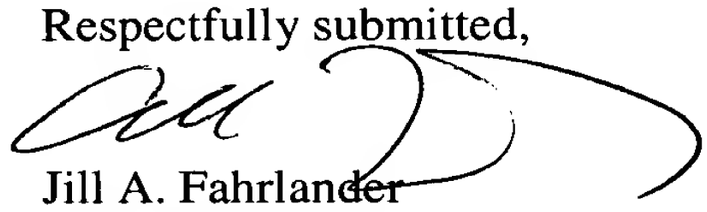
DOUBLE PATENTING - NONSTATUTORY

Claims 2-13 and 17-20 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 21-33 and 36 of copending U.S. Application Serial No. 10/128,727. Therefore, a timely filed terminal disclaimer in compliance with 37 C.F.R. § 1.321(c) is submitted herewith to obviate the judicially created doctrine of obviousness-type double patenting rejection of claims 2-13 and 17-20.

As the application is now in condition for allowance, Applicants respectfully request withdrawal of all rejections and allowance of the claims.

No fee is believed due in connection with this submission. However, if a fee is owing, please charge such fee to Deposit Account No. 50-0842.

Respectfully submitted,



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